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Per Milwertz

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EXAMINER

SAAD, ERIN BARRY

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,276	Applicant(s) MILWERTZ, PER	
	Examiner ERIN B. SAAD	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 15-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-14 is/are rejected.
- 7) ☒ Claim(s) 7-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is indefinite because the claim amendment states "another solder". The claim discloses a "pre-solder" and not a "solder". For the purpose of examination the claim will be interpreted as "another pre-solder".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1- 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Colby (1,425,633) and Kleiman (4,493,449).

Regarding claim 1, the AAPA discloses a method for manufacturing a power capacitor comprising at least one capacitor element, wherein the capacitor element comprises a roll of alternate dielectric films and electrode films, wherein the roll has first

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and second end surfaces, facing away from each other, in which said electrode films are connectably exposed (paragraphs 0002-0007). The AAPA also discloses fixing at least one lead to said pre-solder by soldering the at least one lead to said pre-solder on said at least one end surface of the capacitor element with another pre-solder (paragraphs 0006-0007).

AAPA does not disclose preheating a solder tip in a solder pot with a preheated solder, coating the solder tip with solder in a solder pot, coating the capacitor element by bringing the coated solder tip into contact with the surface of the capacitor element, moving the solder tip along the at least one end surface of the capacitor element and ceasing the contact between the solder tip and the end surface of the capacitor element.

However, Colby discloses a solder iron/tip 21 that is dipped into the solder pot 15 that is heated. Since the steps of preheating a solder tip in a solder pot with a preheated solder, coating the solder tip with solder in a solder pot, coating an object to be soldered by bringing the coated solder tip into contact with the surface of the object, and ceasing the contact between the solder tip and the surface of the object, are well known in the soldering art, to one skilled in the art at the time of the invention it would have been obvious to perform these soldering steps to solder the capacitor of AAPA.

Colby does not disclose an automated soldering iron. However, Kleiman discloses an automatic soldering tool (column 1 lines 5-30 and line 33 to column 2 line 36). Kleiman does not specifically disclose the soldering method as claimed; however, to one skilled in the art at the time of the invention it would have been obvious to use an

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automatic soldering tool in place of a manual soldering tool because it eliminates human error while improving time efficiency. Furthermore, as per MPEP 2144.04, broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.

Regarding claim 2, the AAPA discloses that the capacitor element is wound from the electrode films, comprising a first aluminum foil 1 and a second aluminum foil 2 with at least one intermediate dielectric film of a polymer material, wherein the first aluminum foil at the first end surface of the capacitor element is arranged so as to project outside the edge of the polymer film, whereas at the same first end surface of the edge of the capacitor element the edge of the second aluminum foil is arranged with its edge inside the edge of the polymer film so that the end of the capacitor element exhibits the shape of a roll of the first aluminum foil only and the second aluminum foil is arranged so that the second end of the capacitor element in a corresponding way exhibits the shape of a roll of the second aluminum foil only (paragraphs 0002-0004).

The AAPA does not disclose that the solder tip comprises an active tip which is coated with the solder, and wherein the solder tip, after having been brought into contact with the end surface of the capacitor element, is moved along the end surface of the capacitor element. However, Colby does disclose a solder tip that is coated with solder. While Colby does not disclose that the solder tip is brought into contact with the capacitor element and moved along the end surface of the capacitor element, to one skilled in the art at the time of the invention, it would have been obvious to bring the solder tip in contact with the end surface of the capacitor element and move along the

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end surface of AAPA. It is well known in the art to coat a surface by contacting the solder tip with an area to be soldered.

Regarding claim 3, the AAPA does not disclose that the movement is carried out in one sequence comprising a starting point, two turning points between which the solder tip is moved in one or more cycles, and one end point from which the solder tip is removed from the end surface of the capacitor element, whereby the first or the second turning point may be the same as the starting point or the end point. However, the solder on the capacitor of AAPA is circular. By using the solder tip of Colby, it would have been obvious to one skilled in the art at the time of the invention to arrange solder in a circular pattern by having a starting point, to turning points and an end point.

Regarding claim 4, the AAPA discloses a soldering tip (paragraph 0007). The AAPA does not disclose a speed of movement of the solder tip. However, to one skilled in the art at the time of the invention it would have been obvious that the solder tip would, at some time during the soldering step, be moving between 0 and 0.1 m/s.

Regarding claim 5, the AAPA discloses a soldering tip (paragraph 0007), but does not disclose that when the solder tip is first brought into contact with the end of the capacitor element, it presses down the end surface of the capacitor element. However, to one skilled in the art at the time of the invention it would have been obvious that the solder tip would press down on the capacitor element when it comes in contact with the end of the capacitor element because it is well known in the art that a solder tip is pressed onto the surface of an object being soldered to transfer the solder from the tip to the surface.

Regarding claim 6, the AAPA discloses a soldering tip (paragraph 0007), but does not disclose that the solder tip is pressed down to a depth of between 0 and 6 mm in the end surface of the capacitor element. However, to one skilled in the art at the time of the invention it would have been obvious that the solder tip, at some time during the soldering process, would be pressed down to a depth of between 0 and 6 mm into the end of the capacitor element.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA), Colby (1,425,633), and Kleiman (4,493,449) as applied to claim 1 above, and further in view of Sachs et al. (3,480,759).

Regarding claims 9-10, the AAPA does not disclose that the solder tip is arranged on a shaft whereby the solder tip during the pre-soldering is brought to rotate in the direction of the rotation of the shaft. However, Sachs does disclose a solder tip 1 with a shaft 3 that rotates in the same direction (figures 1-2). To one skilled in the art at the time of the invention it would have been obvious to use a soldering iron that has a tip and shaft that rotate in the same direction to allow for the solder tip to solder at different angles based on the orientation of the object (capacitor element) being soldered.

Regarding claim 11, AAPA does not disclose a solder tip wherein the rotation is less than one complete turn, that is, is less than 360°. However, Sachs does disclose a solder tip wherein the rotation is less than one complete turn (figures 1-2). To one

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skilled in the art at the time of the invention it would have been obvious to have a solder tip rotate within a desired range suitable for soldering the capacitor element of Colby.

6. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA), Colby (1,425,633), and Kleiman (4,493,449) as applied to claim 1 above, and further in view of Tadauchi et al. (EP 1112803).

Regarding claims 12-13, AAPA does not disclose that the temperature of the solder is between 300 and 400 C. However, Tadauchi discloses a solder comprising tin and zinc for use in producing electric or electronic devices and equipment where the solder is in a melting bath to a temperature between 328 and 506 depending on the composition of the solder (table 1 and abstract). To one skilled in the art at the time of the invention, it would have been obvious to have heat the solder to a temperature above its liquidus temperature to ensure that the solder is completely melted and mixed.

Regarding claim 14, AAPA does not disclose that the solder contains 75% tin and 25% zinc. However, Tadauchi does disclose a solder with a tin and solder ratio between 80/20 and 70/30. To one skilled in the art at the time of the invention, it would have been obvious to have a composition range suitable for the process of soldering of the capacitor elements.

Allowable Subject Matter

7. Claims 7-8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the

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limitations of the base claim and any intervening claims. Claim 7 is allowable because the prior art failed to teach or suggest the limitations of the dependent claim where the shaft of the solder tip is journalled in a bearing housing and where the depth into which the solder tip is pressed down is determined by the total weight of the solder tip and the shaft and by the friction in the bearing housing.

Claim 8 is allowable because the prior art failed to teach or suggest the limitations of the dependent claim wherein the shaft is provided with a compression spring whereby the depth into which the solder tip is pressed down is determined by the total weight of the solder tip, the shaft and the compression spring, the friction in the bearing housing plus the compression of the compression spring.

Response to Arguments

8. Applicant's arguments filed 11/3/2009 have been fully considered but they are not persuasive.

9. The Applicant argues that the AAPA and Colby (and Sachs or Tadauchi) do not suggest the invention as recited in claim 1-6 since the combination does not suggest an automated method.

As stated in the rejection above, the Examiner acknowledges that the prior art discloses a manual method and not an automated method. However, prior art Kleiman discloses an automatic soldering tool (column 1 lines 5-30 and line 33 to column 2 line 36). Kleiman does not specifically disclose the soldering method as claimed; however, to one skilled in the art at the time of the invention it would have been obvious to use an

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automatic soldering tool in place of a manual soldering tool because it eliminates human error while improving time efficiency.

Furthermore, as per MPEP 2144.04, broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.

10. The Applicant argues that that AAPA does not suggest fixing at least one lead to the pre-solder by soldering the at least one lead to the pre-solder on the at least one end surface of the capacitor element with another solder.

The Examiner disagrees. The AAPA discloses "after the first pre-soldering, a second pre-soldering is usually carried out. During the second pre-soldering, a solder cake is created on the first pre-soldering, into which the lead may be soldered" (paragraph 0006).

11. The Applicant argues that Colby teaches a solder pot and does not suggest a process for soldering.

The Examiner acknowledges Colby does not teach the soldering method as claimed. Colby was only used as a secondary reference to show that a soldering iron/tip and a solder pot are well known in the art.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN B. SAAD whose telephone number is (571)270-3634. The examiner can normally be reached on Monday through Thursday from 8am-5pm Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. B. S./
Examiner, Art Unit 1793
12/7/2009

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 1793